

# HARWOOD

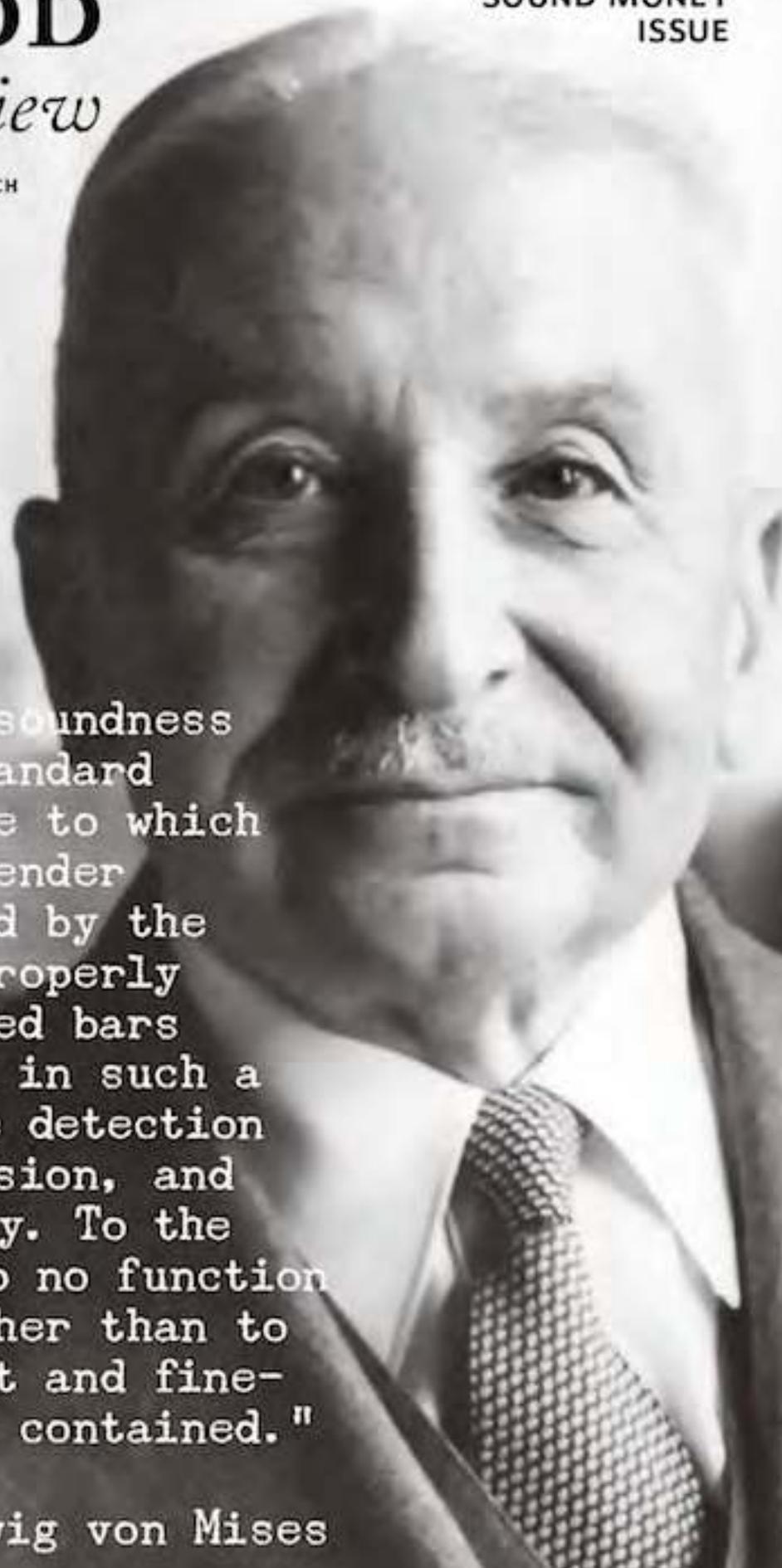
## *Economic Review*

SOUND MONEY  
ISSUE

AMERICAN INSTITUTE FOR ECONOMIC RESEARCH

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A black and white portrait of Ludwig von Mises, an elderly man with a mustache, wearing a suit and tie. He is looking slightly to the right of the camera with a neutral expression. The background is out of focus, showing what appears to be a window or a doorway.

"The principle of soundness meant that the standard coins--i.e., those to which unlimited legal tender power was assigned by the laws--should be properly assayed and stamped bars of bullion coined in such a way as to make the detection of clipping, abrasion, and counterfeiting easy. To the government's stamp no function was attributed other than to certify the weight and fineness of the metal contained."

--Ludwig von Mises

# Harwood Economic Review

AMERICAN INSTITUTE FOR ECONOMIC RESEARCH

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## In This Issue

### Edward Stringham, President

What is sound money? The phrase has been used in both technical and popular literature for hundreds of years, dating all the way back to Thomas Paine in the earliest years of America's founding (our founder E.C. Harwood cited Paine as one of his influences).

Later Ludwig von Mises brought some rigor to the topic, with the quotation on the cover of this quarter's issue. Mises explains that sound money is all about honesty and integrity in the monetary form. It must enable the detection of manipulation when government strays from its minimum function of certifying the money's composition.

The quotation is a reminder of the circumstances surrounding the founding of the American Institute for Economic Research in 1933. The presidential election of 1932 brought Franklin Delano Roosevelt to power. Soon after the inauguration, he went after the soundness of money.

First, FDR closed the banks, effectively prohibiting by law people's rights to withdraw their own wealth from banks with whom they had contracts. Second, he devalued each dollar from 1/20th an ounce of gold to 1/35<sup>th</sup> an ounce of gold, robbing people of their own money. Third, he demanded that all gold in private possession be turned over to the government, enforcing the decision with criminal penalties.

This is not a sound money policy. E.C. Harwood, then teaching at the Massachusetts Institute of Technology, saw what was at stake here. If you violate the policy of

sound money, you are risking people's access to their own wealth and thus trampling on a core freedom. Freedom and sound money are inseparable. What the country needed, in his view, was an ideological counterweight to the presidential administration and to the universities that went along. Sound money needed a voice, to advise people on how to protect themselves and to pave the way for a future in which no arbitrary dictate could again rob the people of their just rights to own and control wealth. AIER would be that voice.

For all these years, AIER has performed that job valiantly. And today, there are ever more opportunities to explain and defend sound money. In addition to gold, other forms of non-governmental money are emerging and I would be happy to see those become successful as well. The technology of the blockchain is promising to make ownership rights transparent, honest, immutable, and extremely difficult to manipulate.

This issue explores some of the core practical and theoretical issues. William Luther, head of AIER's Sound Money Project, explains how Bitcoin is valuable for the same reason that gold was always valuable as a money: it has an underlying use value. Yes, speculation plays a big role as it does with all tradable assets. Putting one's money 20 years ago in Excite.com stock would not have been wise. But that does not mean that all investments in tech stocks were a bad idea. The same is true of cryptocurrency.

James Caton addresses the question of whether and why so-called bubbles come to exist in the cryptoeconomic ecosphere. Brian Albrecht discusses the whole question of "intrinsic value" in light of the perceptions of market participants. Casey Pender and Max Gulker present the results of a deep analysis that shows the triggers that seem most to affect the pricing changes within cryptocurrencies.

These are exciting times for sound money because we might even be seeing a gradual diminution of the power of central banks. Money in the future might even find a way to regain its soundness completely outside government. We have to let the market work to show us a better way.

We don't have E.C. Harwood and Ludwig von Mises around today, but we do have the students of their work to carry on their tradition of rigor and appreciation for sound money. It's all happening at AIER. I thank you for your support.

Sincerely,

*Edward Ater Stringham*

# Why Is Bitcoin So Valuable?

William J. Luther

The price of Bitcoin has soared from around \$1,000 a year ago to \$19,205 in December 2017. It is currently trading for around 10,879. Naturally, many are left scratching their heads. Why is Bitcoin so valuable? In what follows, I consider two common views before offering my own.

## 1. It's costly to produce.

Many in the Bitcoin community claim that Bitcoin is valuable because it is costly to produce. Each Bitcoin represents the computing power used to produce it, they say. Computing power is valuable. Therefore, Bitcoin is valuable, too. Is that right?

There is a grain of truth there. But, ultimately, this explanation doesn't work. Let's start with what is correct: it is costly to produce Bitcoin.

Bitcoin is a distributed ledger technology. The blockchain, or ledger, at Bitcoin's core must be updated when a transaction is made. If you buy a burger with Bitcoin, your account has to be debited and the diner's account credited. To accomplish this without relying on a central clearinghouse, all of the computers running the protocol race to complete a complicated computing problem that processes the transaction—or, more precisely, a block of transactions. Of course, it is costly to solve this computing problem. To encourage folks to incur those costs, the first computer to solve the problem is rewarded with new Bitcoin—Bitcoin that no one owned previously. That's mining. You run the program and, with some luck, acquire some new Bitcoin.

So, where does this explanation go wrong? Basically, it gets the causation backwards. It is true that individuals incur costs to mine Bitcoin. But that doesn't make Bitcoin valuable. Rather, individuals choose to incur the costs of mining *because* Bitcoin is valuable.

Think of it like this: no one digs for gold in my backyard. Why? It is costly to dig for gold, and presumably, they do not believe the gold they could expect to discover would cover the costs of digging there. Incurring the costs of digging in my backyard would not make the project more valuable.

Or, like this: An hour at the doctor's office is not expensive because the doctor has spent a lot of years in school. Rather, a doctor spends a lot of years in school because an hour at a doctor's office is so expensive. Doctors incur the costs necessary to offer medical services because they believe those services will be valued sufficiently. Incurring similar costs to learn how to thread a needle or mow grass would not make threading a needle or mowing grass more valuable. It would just make you an idiot for wasting so much time learning how to do something that isn't worth much.

Remember, kids: Never reason from cost to value. Individuals choose to incur costs based on their expectations of value.

## 2. It's just a bubble.

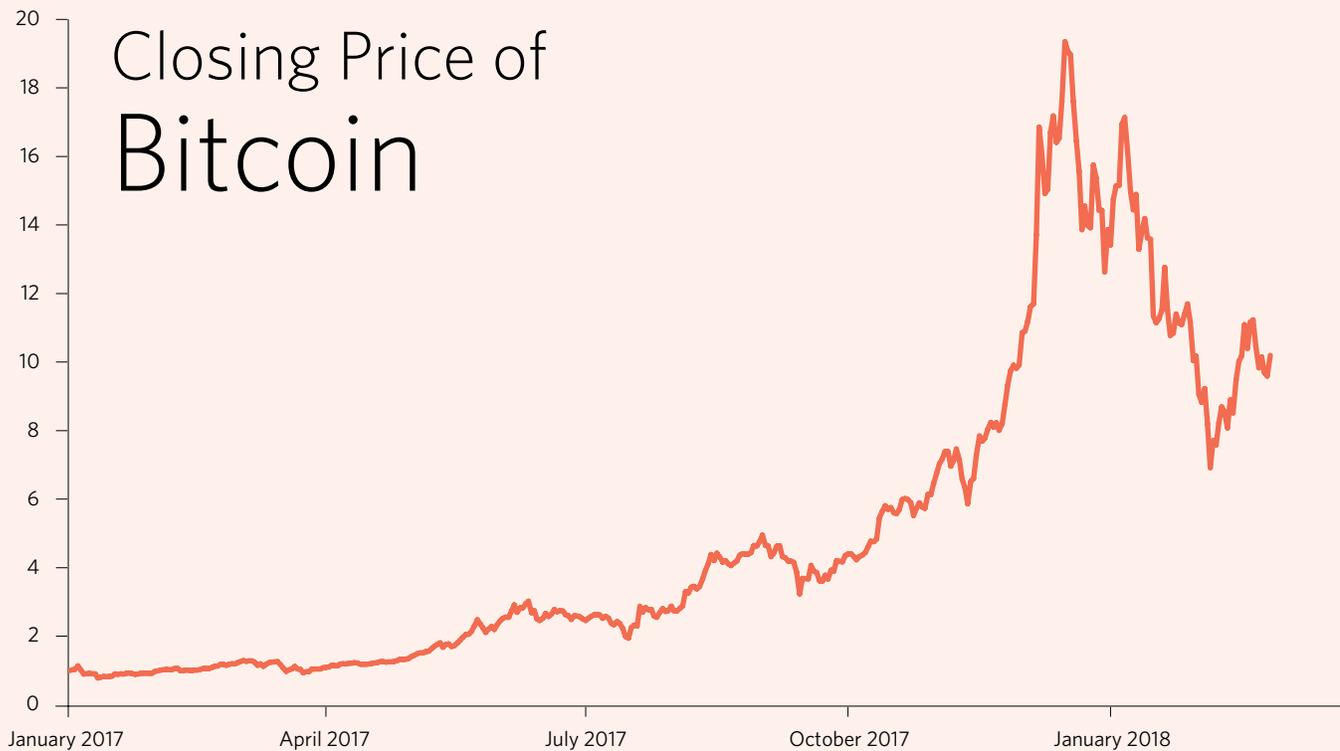
Another common explanation for the huge run-up in Bitcoin's price is speculation. I find claims of speculation unsatisfying. The future is uncertain. Everything is an act of speculation. Going to college? You are speculating that the job you can get once you earn that degree will be worth the time and money spent on education. Starting a pizza shop? You are speculating that enough individuals will be willing to hand over their hard-earned cash for your oven-fresh pies. It is hard to think of anything that isn't an act of speculation. We should be asking: what is the basis for the speculation?

Of course, most who say that Bitcoin's price is driven by speculation *really* mean that it is a bubble, that the price of Bitcoin is greater than its fundamental value. But they don't observe the fundamental value. They only observe the price. So, how can they be so sure? If pressed, they usually say that Bitcoin must be overvalued because there is no way its value could have risen so quickly. Perhaps they are right. Or, perhaps Bitcoin was undervalued before. Since we do not observe Bitcoin's fundamental value, it is difficult to adjudicate between those two views.

## 3. It's useful, or it might be in the future.

So, what's my preferred explanation? It's simple: some people believe Bitcoin serves a useful purpose—or, has the potential to serve a useful purpose in the future. That's it. The price goes up. The price goes down. And the fluctuation in Bitcoin's price merely reflects the extent to which people think Bitcoin will serve a useful role from now on into the future.

\$, thousands, daily



Source: CoinDesk

It is a little more complicated than that, of course. As a medium of exchange, Bitcoin is subject to network effects. That means individuals must form expectations about the future network size, which might be difficult. It is also subject to regulatory shocks or outright bans, both of which might affect network size in hard-to-predict ways. So, not surprisingly, the price bounces around a bit.

But isn't the price too high to be based on Bitcoin's usefulness? I don't think so. The market capitalization of Bitcoin is around \$185 billion at the moment. For comparison, the market capitalization of Visa is just over \$245 billion. The market capitalization of MasterCard is roughly \$154 billion. The market capitalization of Western Union is around \$9 billion. And we could go on down the list. Is it so hard to believe—or to accept that others believe—that Bitcoin might one day capture a third of the global payments market?

Some look at Bitcoin's price and see a bubble. I see a lot of people betting on Bitcoin.



**WILLIAM J. LUTHER, PHD**  
DIRECTOR, SOUND MONEY PROJECT

William J. Luther is an Assistant Professor of Economics at Kenyon College and an Adjunct Scholar with the Cato Institute's Center for Monetary and Financial Alternatives. Luther earned his M.A. and Ph.D. in economics at George Mason University and his B.A. in economics at Capital University. He was an AIER Summer Fellowship Program participant in 2010 and 2011.

# Bubbles, Technology, and Bitcoin

James L. Caton

The price of cryptocurrencies has gone parabolic. Many believe we are experiencing a mania. Individuals are moving into cryptocurrency markets who apparently have no intention of using these instruments as money. Are cryptocurrencies a bubble? If they are, is this necessarily a bad thing? More importantly, can we expect cryptocurrencies to be around for the foreseeable future?

To appropriately frame the emergence of the cryptocurrency market, it is useful to evaluate the significance and role of bubbles. A bubble occurs when an asset's price exceeds its fundamental value—that is, the value produced or expected in the future. During the late 1990s, the tech sector experienced a boom that appears to have been a bubble. Investors realized the growing potential of tech and rushed in to exploit these gains. When money flows into a sector, investors seek to find companies that are undervalued, especially if they did not invest in the earliest stages of the boom. This tends to lift the whole sector. The NASDAQ composite index reached a value of over \$5,100. It soon fell below \$1,200. It would take more than a decade for the index to return to that height. Many investments were shown to have been bad bets for investors. But many proved their worth over the decade that followed the crash. The value of Apple (AAPL) stock grew from a low of around \$0.45 to well over \$5. After the crash, its value hovered in the range of \$1 to \$2. Then, in 2004, the value of the stock started climbing and has followed a generally upward trend ever since. Was there a bubble in tech? Certainly. And Apple was part of this bubble. At the same time, Apple is a company that has proved to be extremely valuable. From the post-crash low, its value has increased by 17,900%!

Some view bubbles and the business fluctuations that accompany them as a problem to be avoided or, at the very least, moderated by monetary or fiscal policy. In an op-ed that briefly reviews the series of bubbles observed since the 1980s, Paul Krugman notes that “the main lesson of this age of bubbles. . . is that when the financial industry is set loose to do its thing, it lurches from crisis to crisis.”

Krugman is right. The financial system may fuel bubbles from time to time. What he does not seem to realize, however, is that this is both necessary and efficient so long as the bubble is not the result of state-led market distortions like the ones we observed during the recent housing crisis. Absent intervention, a bubble is a sign that the market has discovered potential for value creation. Jason Potts argues that “bubbles are a normal part of the market capitalist system when they emerge spontaneously from the market discovery process, and problematic only when artificially induced by ill-considered policy.”

Assets subject to an industry-wide boom are not easy to price. As we observed with the NASDAQ bubble, investors rush in to find assets that they believe are undervalued. As the bubble progresses, however, pricing seems to lack an anchor. Part of the reason for this is that not only are lower-quality assets being included in the bubble, but lower-quality investors are entering into the market. Once liquidity dries up and the firms and investors face the strain of a decreased flow of funds, prices finally correct to reflect underlying value. Those assets that were bid up by uninformed investors must be liquidated. Due to the systemic nature of credit fluctuations, many assets that truly have higher earning potential will also lose value during the crisis period. But, as with Apple stock, those assets will be revalued sooner or later.

A sketch of bubbles can inform our interpretation of Bitcoin and the cryptocurrency market more generally. Bitcoin has been the most popular cryptocurrency, leading the others in terms of price and market capitalization. Discussion of a bubble in Bitcoin began in 2013, when it surged from just over \$10 in value to over \$100 and again to over \$1,000 (see chart on next page). Its most recent surge to over \$19,000 has led many to speculate that it is in bubble territory. It has since fallen and is currently valued around \$10,000.

Following behind Bitcoin are a number of other cryptocurrencies, like Litecoin and Bitcoin Cash (a hard fork originating from Bitcoin). The alt-coins have also experienced a significant rise in value over the last year, as investors speculate on whether they might provide superior service on different margins and even challenge Bitcoin's status as most dominant cryptocurrency. And the market for cryptocurrencies is by no means thin. The top 100 cryptocurrencies by market capitalization are valued at over

\$500 billion at present. It is possible that this value will continue to grow as more investors enter this market. But one thing seems certain: cryptocurrencies are attracting the resources necessary to develop and sustain highly functional platforms that may one day lead to their use as a

currency, much as F.A. Hayek imagined over 40 years ago. There will probably be a downturn at some point that thins the market. However, we can expect that the most functional currencies will remain in use in much the same way that Apple survived the tech crunch more than 15 years ago.

\$, thousands, daily



Source: CoinDesk



**JAMES L. CATON, PHD**  
FELLOW, SOUND MONEY PROJECT

James L. Caton is an assistant professor in the Department of Agribusiness and Applied Economics and a fellow at the Center for the Study of Public Choice and Private Enterprise at North Dakota State University. Caton earned his Ph.D. in economics from George Mason University, his M.A. in economics from San Jose State University, and his B.A. in history from Humboldt State University.

# Intrinsically Worthless to Whom?

Brian C. Albrecht

If you hang out with people who talk about money—in the “what is money” sense, not in the “I make a lot of money” sense—the conversation eventually goes to Bitcoin. Is Bitcoin intrinsically worthless? That is, does it have value as something other than as a money? The answer is, as others have shown, that it depends.

But it depends, in a particular way. It depends on who you are considering; to whom is Bitcoin intrinsically worthless? For some people, the technology itself gives Bitcoin intrinsic value. For someone like me, who thinks a computer is only for Twitter, the technology means nothing.

This distinction is not new to Bitcoin. Many monies have been intrinsically valuable to one person and worthless to another. When cigarettes became money in P.O.W. camps during WWII, they had intrinsic value to smokers but were intrinsically worthless to non-smokers. Even the classic example of gold as a money with intrinsic value isn't absolute. I, for one, would have no idea how to “use” gold. Gold is, in some sense, intrinsically worthless to me.

But money is, by definition, not about one person in isolation. Money is social. What really matters is whether enough people in the society place non-monetary value on the money. I do not use the gold coin. But other people in society can turn that coin into jewelry, a filling, or computer wiring. Therefore, the reasoning goes, gold is intrinsically valuable to society and we classify it as a money with intrinsic value.



Of course, the world is made up of many societies and sub-societies that interact to varying degrees. The choice of which society to focus on matters.

Take wampum, for example. Wampum refers to the shell beads that became money during the 17th and 18th centuries in New Netherlands, which later became New York. Was wampum intrinsically worthless? People often give seashells as an example of an intrinsically worthless, fiat money—both in monetary theory research and textbooks. But it depends.

It depends on the the society of focus. For the Dutch and English, wampum was intrinsically worthless. It was valuable solely as a medium of exchange: first to exchange for furs from the Iroquois and then as a general medium of exchange within the colony. For the Iroquois, wampum was not a fiat money. It was a tool for writing contracts in a pre-literate society. It was used in religious ceremonies and much more. Wampum was as intrinsically valuable as any good the Iroquois possessed.

Wampum Wrist Ornament, Iroquois, 18th century AD  
**Native American Collection**, Peabody Museum, Harvard University



What do these historical examples tell us about the future of money? As Alex Salter has pointed out, the history of money need not influence the workings of money today. The same could be said about whether a money is intrinsically worthless or not. The categories create a taxonomy of monies, but tell us little in themselves about what is “the best” money or whether Bitcoin will succeed as a money.

Yet, history does show us that Bitcoin has historical precedents, at least in one dimension. When the societies of the Iroquois and Dutch came into contact, something new emerged as money. As the world continues to become more connected and more sub-societies interact with each other, expect more situations when something that is intrinsically worthless to one group is intrinsically valuable to another.



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# Teaching Free Ente



**Teaching Free Enterprise** is the American Institute for Economic Research's program designed to bring world-class free market economic research and ideas to K-12 teachers to improve the quality and experience of economic education in middle school and high school classrooms.

The TFE team designs State Standard compliant and aligned lesson plans, online and offline classroom activities based on practical and real-world complex free-market economic ideas. Our units are made in conjunction with leading scholars from renowned universities and research centers.

We then proceed to partner with state departments of education, regional education service centers (ESCs) and/or school districts (public and charter) to bring these academic units for a professional-development session with middle and high school social studies teachers.



# rprise

Through our online-learning management system, we are then able to track how many student hand-out prints, video plays, etc. are being used by each individual teacher so we can measure implementation and adoption of our curriculum. We currently have an overall adoption rate of 30 percent of attendees that implement the curriculum in their classrooms within four months.

Our best rating has been a 50 percent session-by-session (in Dallas, Texas) retention rate of teachers that have attended two or more programs with us. We currently operate in Texas and Arkansas and are soon expanding (summer 2018) to Connecticut, Rhode Island, Maryland, and Massachusetts.



## Current Lesson Plans

Paradox of Progress: Change is inevitable!

Time Well Spent: Productivity has made us wealthier

Trade

Economic Freedom of the World

Taxation and Public Finance

Morality of Markets

Labor Market Economics

Macroeconomics I (Short-Run Macro)

Development Economics: Why are some countries richer than others?

Are Sweatshops Good or Bad? Opportunity cost

Austrian Economic Thought (History of Economic Thought Series)

Health Economics

Food and Drug Administration and Regulation

Culture and Trade

Economics of Happiness

# Bitcoin Went From Periods of High Volatility in 2016 to Consistently High Volatility in 2017

Casey Pender and Max Gulker

It only takes a quick glance at recent news to know Bitcoin is volatile; its fluctuations in price have made headlines for months now. But exactly how volatile is it relative to commonly used currencies, and how does that affect this cryptocurrency's ability to actually be a usable medium of exchange?

This article compares the daily volatility of the Bitcoin/dollar exchange rate with that of the pound, the euro, the yen, and a reliable store of value, gold. We find that both the average daily price change and the standard deviation of Bitcoin are several times higher than our benchmarks.

We also find that Bitcoin changed with respect to its volatility between 2016 and 2017. In 2016, Bitcoin had periodic episodes of high volatility and behaved more like benchmark currencies in other periods. In 2017, however, high volatility was constant through the year.

## Why Volatility Matters

The future is unpredictable, which can be a huge deterrent to planning and coordination of plans. A medium of exchange that is stable in value and highly liquid, so someone can trade it in a pinch without taking a hit, allows us to better deal with uncertainty and helps us plan and coordinate into the future. Assets that are too volatile are therefore undesirable as currencies.

When considering Bitcoin's potential future viability as a currency, it is therefore important to understand its volatility relative to widely used currencies, and whether that relative volatility is changing over time. It must be stressed that past volatility doesn't rule out future stability, but as we discuss below, Bitcoin's relative volatility has increased in the past two years.

## Trending in the Wrong Direction

We calculated some basic statistics on change and volatility for Bitcoin and the four benchmarks in 2016 and 2017. In 2016, Bitcoin's average daily price change (measured as the absolute value of the percentage change in the dollar exchange rate) exceeds the benchmark currencies' by a factor of three to four, and is over twice the average daily price change of gold. The results are even more stark when

looking at standard deviation, where Bitcoin exceeds the benchmarks by factors of three to six.

Already high in 2016, the 2017 increase in Bitcoin's volatility relative to the benchmarks is striking. Though the price of Bitcoin increased by over 14-fold in 2017, the volatility measures are consistently almost 10 times higher than the benchmarks. We also analyzed data on the Mexican peso, the ruble, the rand, and the Turkish lira, currencies that might be expected to be less stable, and found that Bitcoin's relative volatility was almost as high as for the benchmarks shown here.

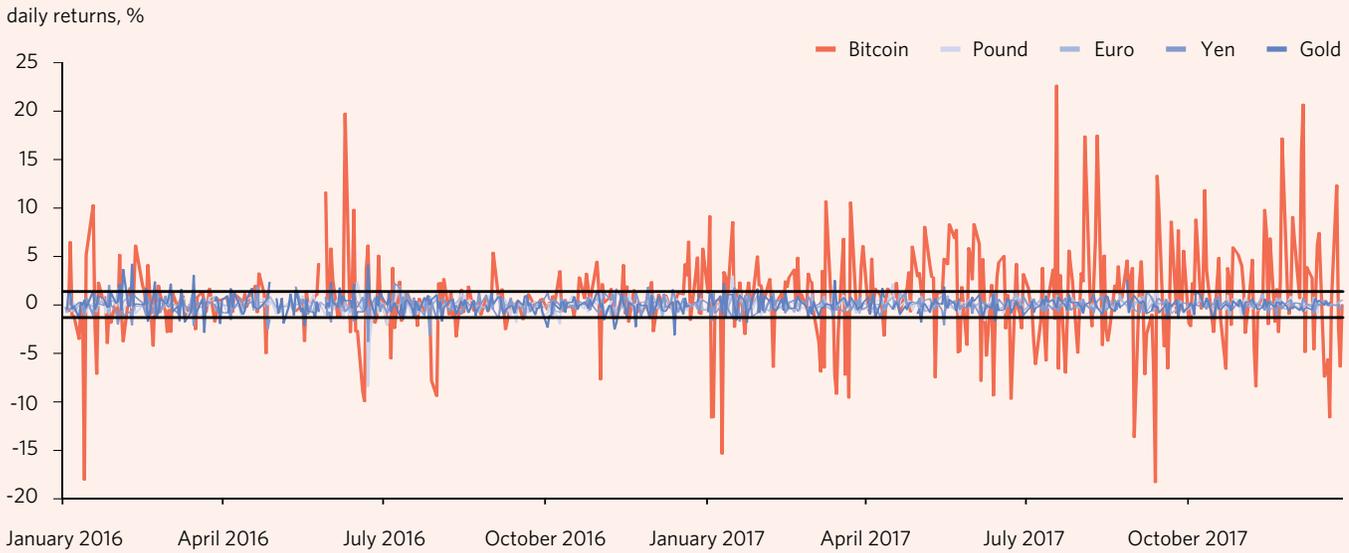
## Ups and Downs

While the numbers alone tell a consistent story about Bitcoin's high relative volatility, a visual representation is particularly striking. The chart below, which graphs the daily percentage change in exchange rates, reveals the enormous single-day changes in Bitcoin's price. It is notable that in 2016, Bitcoin appears to have gone through some periods where its volatility was much closer to the benchmarks, but by 2017, those periods all but disappeared.

The horizontal bands on the graph show the range in which 95 percent of the daily changes in the benchmark currencies and gold fall. Bitcoin's daily price changes exceed this 95 percent interval a staggering 280 days, or 54 percent of the time, in 2016 and 2017.

To confirm our findings about Bitcoin's relative volatility over time, we developed a measure of standard deviation based on a 20-day exponentially weighted moving average of Bitcoin's price over time. The results follow the same pattern as the daily percentage changes above. Though 2016 is characterized by periods where Bitcoin's volatility is closer to the benchmarks, it is punctuated by periods of far greater volatility. In 2017, this measure of volatility once again remains uniformly higher than that of the currencies to which it is being compared.

# Bitcoin/USD Daily Percent Change versus Pound, Euro, Yen, and Gold 2016–2017



Sources: [www.quandi.com](http://www.quandi.com) (XAU/USD), [www.investing.com](http://www.investing.com) (GBP/USD, EUR/USD), [www.macrotrends.net](http://www.macrotrends.net) (USD/JPY) and [www.coindesk.com](http://www.coindesk.com) (BTC/USD)

## A Regime Change?

This study has sought to quantify the degree to which Bitcoin is more volatile in its dollar price than more commonly used currencies. Basic measures such as average daily percentage change and standard deviation are over six times as large as those for the benchmarks during 2016 to 2017. But Bitcoin seems to have experienced something of a regime change, going from periods of great volatility in 2016 to consistently high volatility in 2017.

History is full of examples of assets that rose or fell meteorically, but despite its overall positive trend, it is difficult to think of a precedent for the level of up-and-down volatility experienced recently by Bitcoin. This raises the intriguing question of why. Is it a price-discovery process

for an extremely novel piece of technology, is there something in the trading process that causes large swings, or are there frequent cases of market manipulation? Quantifying Bitcoin's volatility relative to that of commonly used currencies is an important first step, but this topic is certainly ripe for further research.

*This article is based on research begun by four students at Missouri University of Science and Technology during a two-week intensive program held on-site at AIER. We thank Alexandra Emily, Noah Madrigal, Zhiwei Lu, and Noah Williams for their excellent research, and their professor Ana Ichim for steadfast guidance. We also particularly thank Alexandra for continuing to work on and contribute to this project after the program ended.*



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Casey Pender is a MA student in the PPE program at Cevro, specializing in Austrian economics. He is originally from Canada and did his BA in philosophy at Carleton University in Ottawa. Casey is mostly interested in macroeconomics and monetary policy and is writing his MA thesis on the history of Free Banking in Canada.

# Bitcoin's Largest Price Changes Coincide With Major News Events About the Cryptocurrency

Max Gulker

*This article is based on the excellent research of Alexandra Emily, Benjamin Loeper, and Edward Koharik, under the supervision of their professor Dr. Ana Ichim and AIER staff.*

The volatility of the Bitcoin/dollar exchange rate is frequently discussed in the media and often cited as the primary reason why Bitcoin does not currently function as a reliable store of value and medium of exchange, generally accepted requirements for something to count as a money. AIER collaborated with undergraduate students from the Missouri University of Science and Technology, through a fall-semester course followed by an intensive two-week program at AIER, to investigate various aspects of Bitcoin's volatility and the determinants of its price. In the coming weeks, we will publish multiple articles summarizing our findings. The first article in this series focuses on work done by a group of students during the fall semester on the causes of Bitcoin's largest daily changes in price.

If Bitcoin trades in an efficient market with enough buyers and sellers, theory holds, its price should reflect all publicly available information about it, and changes in price should

reflect new information. However, Bitcoin might not yet meet this standard. First, if the number of market participants is relatively small, the idiosyncratic behavior of a few individuals may significantly impact the price. Second, there have been accusations of market manipulation by traders of Bitcoin. Third, many observers believe Bitcoin to be in a speculative bubble, which may or may not imply large price changes not driven by newly revealed information.

While the scope of the study does not extend to all daily changes in Bitcoin's price, we focused on the largest daily changes in price from the beginning of 2016 through the end of November 2017. We found evidence largely consistent with Bitcoin's largest price changes occurring on dates when significant or widely discussed new information about the cryptocurrency was revealed. This does not mean we consider the market for Bitcoin to be efficient; we do not directly study the size of these price changes, nor can we establish certain causality between the events and price changes in question. However, the fact that one can point to specific events coinciding with the largest changes in price suggests at least some degree of rationality in the market.

## Bitcoin: largest daily price changes since 2016 (January 2016–November 2017)

Date	EOD Price	Percent Change	Percent Change Magnitude	Potential Reasoning
1.15.2016	358.77	-16.5130	16.5130	Mike Hearn quits Bitcoin saying, "it has failed"
1.11.2017	775.98	-14.2360	14.2360	China announced it had begun investigating Bitcoin exchanges in Beijing and Shanghai
7.17.2017	2244.26	15.7470	15.7470	Miners show early support for SegWit. India's Bitcoin legalization focus turns to taxation.
7.20.2017	2877.39	25.4090	25.4090	Bitcoin rallies sharply after vote resolves bitter scaling debate
8.5.2017	3301.76	14.4980	14.4980	Bitcoin splits into Bitcoin and Bitcoin Cash
9.14.2017	3226.41	-16.7220	16.7220	U.S. News: Dimon reiterates criticism of Bitcoin, Chinese authorities plan to shut down domestic digital-currency exchanges,
9.15.2017	3686.9	14.2730	14.2730	J.P. Morgan CEO Jamie Dimon calls Bitcoin a fraud, Banking & Finance Bitcoin prices sink as exchange to shut

The table on p 14 summarizes the seven largest daily price changes of Bitcoin in terms of absolute value during the period in question. Each coincides with a new event or piece of information that investors may have found important.

The largest daily increase in Bitcoin’s price during the period occurred on July 20, 2017 (25.4 percent), when an agreement appeared to be reached regarding the scaling of Bitcoin’s blockchain-based payment system. The largest daily price decrease occurred on September 14, 2017, when the Chinese government announced plans to shut down domestic cryptocurrency exchanges.

We also examined the 50 largest price changes in absolute value during the period, summarized in the table below. We categorized potential news events into eight categories: BS (change in structure of Bitcoin), PO (personal opinions), GR (government regulation), OC (other currencies), NI (new investment opportunities), UI (under investigation), CS (cybersecurity), and NF (nothing found). Of these

categories, we found that news about changes in the structure of Bitcoin (such as scaling and potential forks) had the largest effect on the price. Looking closer at the dates for which we did not find news about Bitcoin itself, thus categorized NF, we found there were often news releases about changes in major currencies around the world, such as large inflation of the euro or increases in the value of the dollar. Large changes in the price of Bitcoin on those days might be explained by these events, or might be instances of price changes driven by smaller numbers of individuals, as discussed above.

While the nature of the news events does not necessarily explain the magnitude of Bitcoin’s price changes or its daily volatility, it does suggest that the market is not being driven entirely by manipulation or the behavior of small numbers of traders. In the next brief in this series on AIER’s collaboration with the Missouri University of Science and Technology, we will look directly at Bitcoin’s volatility and compare it with that of widely used currencies and other assets.

## Bitcoin: 50 largest daily price changes by type of news (January 2016–November 2017)

Category	Category Description	# Obs	Mean	SD	Min	Max
BS	Changes in Bitcoin Structure	8	12.77913	5.993332	5.487	25.409
PO	Personal Opinions	6	8.726083	3.888224	6.196	16.513
GR	Government Regulation	12	8.092417	2.591246	3.8985	14.236
OC	News About Other Currencies	7	9.310857	1.921141	5.487	10.98
NI	New Investment Opportunities	7	7.144357	1.638586	3.8985	8.763
UI	Bitcoin/Exchanges Under Investigation	2	6.4985	0.583363	6.086	6.911
CS	Cyber Security News	3	8.498667	1.124	7.214	9.301
NF	No News Found	9	7.089667	1.390977	6.281	10.742



**MAX GULKER, PHD**  
SENIOR RESEARCH FELLOW

Max Gulker joined AIER in 2015. His primary research areas are applied microeconomics and industrial organization. Max holds a Ph.D. in economics from Stanford University and a B.A. in economics from the University of Michigan. Follow [@maxgAIER](#).

# How Will the New Tax Law Affect You and Your Charitable Giving?

Jeff Lydenberg

The new tax law became effective on January 1, 2018. Of the numerous changes, the two most directly affecting charitable gifts are:

- 1 The increase in the standard deduction (\$12,000 for singles, \$24,000 for married couples filing jointly); and
- 2 Elimination or restriction of numerous itemized deductions (though the charitable deduction remains intact).

Both of the above will increase the number of individuals claiming the standard deduction, and thus reduce the number of itemizers who can take an income tax charitable deduction. However, if you live in a state with high income and property taxes and you have a mortgage you could find that you still itemize.

Even if you won't itemize, here are some strategies to make lifetime gifts to charity and still receive tax benefits:

**Make gifts of appreciated property such as publicly traded securities to AIER.** Even if you don't itemize, you will still be able to avoid capital gains tax by making a gift of appreciated assets owned by you for at least one year.

**Make gifts to AIER using the charitable IRA rollover.** If you are over 70½ you can make a direct transfer from your traditional IRA or Roth IRA to charity of up to \$100,000. Such a transfer is not taxable and counts towards satisfying your required minimum distribution.

**Make larger gifts to AIER.** If your total non-charitable deductions are close to equaling the standard deduction, a larger charitable gift may increase your total deductions enough that it makes sense for you to itemize; the additional tax savings that itemizing offers may reduce the effective cost of your gift.

**Make a gift to AIER from all or a portion of what's left in your retirement plan.** Assets in your IRA, 401(k), or other qualified retirement plan may be subject to income tax when distributed to heirs. Making AIER a beneficiary of a portion or all of your retirement plan will avoid the income tax that might otherwise be due from your heirs. This is an extremely tax-efficient way for you to make gifts to AIER that costs your heirs less than giving other kinds of assets.

As with any change, you should contact your accountant or financial planner to understand how the new tax law will affect your individual tax situation.



SEE  
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TO GIVE  
TO AIER



## Robert Graboyes

AIER Summer Fellow 1981 and 1982  
AIER Visiting Fellow 2007

*Two golden summers at the American Institute for Economic Research gently reshaped my philosophical outlook and personal life forever—much for the better. My 1981 and 1982 summer fellowships helped instill a deep appreciation for the intensely personal nature of economic markets, and in many ways, my career has come full circle.*

*The topics of my focus today hark back to the nontraditional strains of thought I debated those many years ago at AIER. And I'm as much a journalist as economist nowadays. In 2014, some of these writings won me the Reason Foundation's Bastiat Prize—an international journalism competition “which honors the writing that best demonstrates the importance of individual liberty and free markets with originality, wit, and eloquence”.*

*It has also delighted me to see that since my student days, AIER has re-engaged with mainstream economics, while retaining its outsider perspective.*

Dr. Robert Graboyes is a Senior Research Fellow and Health Care Scholar at the Mercatus Center at George Mason University; Clinical Professor (Health Economics), Virginia Commonwealth University and University of Virginia, and author of *Fortress and Frontier in American Health Care*.



# AIER Events

### Harwood Graduate Colloquium

April 12–15, 2018      AIER Campus, Great Barrington, MA  
A four-day event where 15 graduate students read and discuss materials on the theme of alternative institutions of governance.

### Student Leadership Retreat With The Atlas Society and Students for Liberty

April 20–22, 2018      AIER Campus, Great Barrington, MA  
This retreat will bring together promising students to talk about the underpinnings of a free society.

### AIER Adam Smith Reading Group Sponsored by The Liberty Fund and the Templeton Foundation

April 28, 2018      AIER Campus, Great Barrington, MA  
This one-day program for 15 invitees associated with AIER will let us discuss some passages from Adam Smith's *Wealth of Nations* and *Theory of Moral Sentiments*.

Visit [www.aier.org/events](http://www.aier.org/events) for local AIER events near you.  
New events added weekly!

# Discover the Benefits of Planned Giving

Many of AIER's supporters have discovered how giving to AIER through our planned giving programs supports AIER's mission and provides numerous benefits for them and their loved ones.



A good plan will provide for your family or loved ones, protect what you have worked so hard to acquire, and leave you feeling safe and secure.

Certain plans allow you to guarantee income for up to three generations of beneficiaries, so you can put a plan in place for any of the important people, or even organizations, in your life.

In addition to supporting the mission of AIER, a planned gift can provide to you substantial tax advantages, especially on gifts of stocks and real estate. The total income, estate, and capital gains tax savings and the probate-expense savings can come close to the amount of your planned gift. The benefits include:

- Income for Life**
- Income Tax Deductions**
- Reduced Capital Gains Taxes**
- Reduced Estate Tax**

Simply by taking advantage of incentives the IRS provides, you and your advisor can craft a gift that fits your needs. A planned gift makes it possible for you, your loved ones, and AIER to all benefit.

**Use our online calculator** to create unique opportunities to meet your financial goals and support AIER.

<http://plannedgiving.aier.org/calculator>

Interested in learning more?

**Contact David Michaels 888.528.1216 x3146**

# SUPPORT AIER

and help us teach Americans the importance of sound money



*I followed Colonel Harwood for many years and one thing that came through in all of his writing was that he was a great patriot and a strong believer in an honest currency. Having been in the investment business for 48 years, I think Colonel Harwood's teaching is needed even more now than it has ever been. He had a great impact on my thinking.*

—Arnold Van Den Berg, Longtime AIER Member

**AIER members understand the importance of AIER's mission and want others to understand too.**

Annual Sustaining Membership dues and donations to our programs help AIER provide the information, tools, and analysis that Americans need to make decisions to advance peace, prosperity, and human progress. We promote personal freedom, free enterprise, property rights,

limited government, and sound money. The people that value these principles the most are members of the American Institute for Economic Research. Donations to AIER are tax-deductible.

Please donate to AIER today to support our ongoing research into business cycle dynamics, inflation, government in the economy, and investment economics. Call us at 888-528-1216, visit [www.aier.org/donate](http://www.aier.org/donate), or mail in the coupon below.

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AIER library, 1970s  
Photo courtesy of Fred Harwood

